Control Wave™

Bristol® ControlWave® XFC
Gas Flow Computer

Bristol® ControlWave® XFC, from Emerson Process Management is a cost effective, competitive solution when requirements call for a chart replacement or flow computer in a compact, explosion-proof package.

Additionally, ControlWave XFC provides extended capabilities, such as a second meter run or plunger lift control, while maintaining the convenience and simplicity of an integrated, explosion-proof installation.

ControlWave XFC Overview

Hardware/Packaging Features

• Smart, gauge pressure or DP/P sensor assembly can be removed and replaced, independently of the "top end" assembly.

• Precision RTD interface provides very accurate process temperature measurement.

• Wide, 6.0 to 30.0 Vdc operating input voltage range works with a broad range of power sources.

• Very low power consumption minimizes costs of solar/battery power systems.

• Three serial communication ports are standard.

• Optional I/O includes 2 DI, 2 High-speed Counter inputs and 4 DO as well as an additional 3 AI and 1 AO.

• Integral 2-line LCD operates in a continuous cycle mode.

• Operating temperature range is -40 to 176ºF (-40 to 80ºC).

• Class I, Division 1 (explosion-proof) and Division 2 NI approved.

• Readily integrates with Emerson's Bristol 2808 and 3808 MVT low power transmitters for explosion-proof installations.

Now available with Integral P/T or DP/P/T Measurement

ControlWave XFC comes in a very compact, explosion-proof package. Smart DP/P sensor assembly is shown in this photo.

Firmware/Software Features

• ControlWave XFC is pre-programmed to meet API 21.1 requirements for a two-run metering station with networking via BSAP or Modbus.

• PC web style menu pages are pre-configured for all user operations.

• Using our ControlWave Designer, IEC 61131-3 programming environment, any user or third party can modify the standard application or create a completely customized program—and full support from Emerson is available, every step of the way.

• Additional, standard application programs will be introduced on a continual basis.

Remote Automation Solutions

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Application Areas

ControlWave XFC is appropriate to all applications for flow computers, including those that require process control or extension to two meter runs, for example:

- Production wells

- Injection wells

- Production optimization applications

- Off-shore platforms

- Separation plants

- Compressor stations

- Storage facilities

- Transmission metering stations

- Distribution/LDC metering/gate stations

Using the gauge pressure sensor, ControlWave XFC provides accurate, P/T measurement for linear meters, including positive displacement, turbine and ultrasonic technologies. The multivariable, DP/P sensor applies best to orifice metering, where accurate, three-variable (DP/P/T) measurement is required.

Package Description

ControlWave XFC is ordered using a model number specification. The complete model number specification is included toward the end of this product data.

Standard equipment includes an explosion-proof housing, two-board electronics assembly with 3 serial ports RTD interface, 2-line LCD, and the standard API 21.1 EFM application program. Emerson's Bristol smart sensor assembly, which provides measurement of gauge pressure or differential pressure plus static pressure, is also standard equipment.

The model number additionally allows a user to specify the following:

- Sensor upper range limits

- Wetted parts material, stainless steel or Hastelloy C

- Optional manifold adapters

- Optional mounting bracket

- Standard application program

- I/O configuration choices are no I/O; 2 DI, 2 HSC, 4 DO; and 2 DI, 2 HSC, 4 DO plus 3 AI and 1 AO.

Specifications – Package

- Dimensions: Please see the diagram on page 14

- Clearance: Please allow at least 2.5" space on either side for cabling.

- Dimensions: MVT Wet End: 3" H x 3¾" W x 2½" D

- Weight: 12 lbs.

- Mounting: Pipe-mounting or direct-mounting is recommended; a 2" pipe-mount kit is optional.

Specifications – Operating Environment

- Wide operating power input voltage range of 6.0 to 30.0 Vdc. Shutdown sequence occurs at 5.46 Vdc nominal.

- Power input surge suppression: 30V transorb to ground meets ANSI/IEEE C37.90-1978.

- Fuse: 0.375 A slow blow.

- Operating Temperature Range: -40 to 176ºF (-40 to 80ºC).

- Operating Humidity Range: 10 to 95% RH non-condensing.

- Vibration Rating: Maintains proper operation while subjected to a 2.0g acceleration over 10-150 Hz and 1.0g acceleration over 150-2000 Hz.

- RFI Immunity: In conformity with IEC 1000-4-3 Level 2 80 MHz to 1000 MHz.

Bristol® ControlWave® XFC

- ESD: Field connected circuits meet the requirements of IEC 1000-4-2 for ESD withstand capability up to 4KV.

- Nema Rating: Nema 4, 4x and 7.

Hazardous Area Approvals

- Explosion-proof for operation in Class I, Division 1 Hazardous Areas: UL/CUL Approved.

- Non-incendive for Class I, Division 2 Hazardous areas: UL/CUL Approved.

## Selection Item Descriptions and Specifications

Emerson's Bristol Sensor Assembly

The sensor assembly is Selection "ABC" in the model specification, e.g. "022" for the 100 psi gauge pressure sensor or "142" for a 300" DP/2000 psig static pressure multivariable sensor assembly.

Using the integral sensor assembly is the easiest implementation for a single meter run; however, the standard application program also allows use of external transmitters.

Multiple-run systems can use the integral sensor assembly for the first run and an external, smart multivariable transmitter, such as the Bristol 3808 MVT from Emerson(which includes the exact same sensor assembly), for additional meter runs.

If the sensor assembly requires a repair, the user
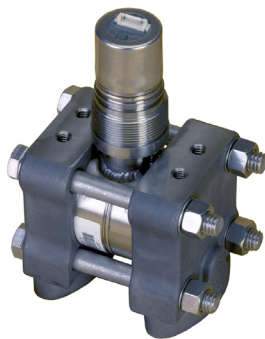
Bristol DP/P Multivariable Sensor Assembly

can change it out and continue operating with the "top end" electronics, including flow information, alarms and historical archives, all intact.

Emerson recommends that users practice "depot level" service, in other words, that the sensor assembly be removed and replaced at the user's shop rather than out at the site.

Each sensor assembly has a nine-digit part number, which can be used to specify a replacement part (please refer to the last page of this product data).

Physical Specifications – MVT Assembly

- Flange Material: Hastelloy C or 316 Stainless Steel

- Flange Bolt Material: Hastelloy C or 316 Stainless Steel

- Diaphragm Material: Hastelloy C or 316 Stainless Steel

- Fill Medium: DC 200 Silicone

- Flange Process Connections: ¼" NPT

- Connects to the main electronics via a dedicated SPI bus cable.

Note: Wetted parts materials, Hastelloy C or Stainless Steel, are specified in Selection "D."

Accuracy and Performance Specifications – Gauge Pressure or Differential Pressure/ Static Pressure

- Combined effects of nonlinearity, nonrepeatability and hysteresis at reference pressure and over the operating temperature range: GP, DP and SP linear mode: ±0.075% of Calibrated Span or 0.015% of URL, whichever is greater.

- Temperature effect on Static and Differential pressure: ±0.21%URL maximum combined shift of zero and span with an ambient temperature change of 60ºC (108ºF)

- Static Pressure Effects On Differential Pressure: Zero error: ±0.1% URL, for a change in static pressure of 1000 psi; Span error: ±0.1%

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reading, for a change in static pressure of 1000 psi

- Long Term Stability at Constant Conditions: ±0.1% URL/Year typical

- Mounting position effect: ±2 in H2O maximum, which can be calibrated out.

- Ripple and noise: Per ISA 50.1 Section 4.6

Sensor Assembly Wetted Parts Material

Selection "D" allows the user to choose the material used in the flange bolts, flanges and diaphragm in the sensor assembly. Materials are 316 stainless steel and Hastelloy C.

Processor/Main Electronics

The electronics assembly consists of two circuit boards with the CPU, LCD display, communication, dc/dc power system controller functions and the I/O functions all installed within the explosion-proof housing.

CPU/System Controller specifications are listed here. For information and specifications on the I/O, please refer to the description for Selection "K," "I/O CONFIGURATION," on page 6.

Specifications for CPU/System Controller

- 32-bit ARM9TDMI RISC Core Processor running at 14 MHz

- Serial Real Time Clock Accurate to 5 seconds/month at 25 °C

- 512 KB Flash Boot/Downloader

- 2 MB SRAM

- 8 MB Simultaneous Read/write Flash

- Backup Battery for Real Time Clock and SRAM: 300 mA-Hour Lithium Coin Cell, 4000 Hour Backup Time

- 3 Serial Communication Ports (see below for further information)

- 6.0 to 30.0 Vdc Power Supply with Power Fail Sequencer

- Two-line LCD with nine, seven-segment numeric characters plus polarity on line 1 and six, fourteen-segment alphanumeric characters on line 2.

Information on the Serial Ports

COM1:

- RS 232

- Three wire interface

- 300 to 115.2K baud rates

- Physical Interface is on the main termination assembly.

COM2:

- RS 232

- 300 to 115.2K baud rates

- Physical Interface is on the main termination assembly.

- Supports RTS, CTS, DTR, and DCD modem control signals

- RS 232 transceivers are enabled by the port's DTR.

- DCD remains active in power-down mode.

COM3:

- RS 485, 2-wire

- 300 to 115.2K baud rates

- Physical Interface is on the main termination assembly.

ControlWave XFC
Standard Application Program

Selection "EF" allocates two digits with the expectation that we will offer a number of standard applications in the future. Currently, the two-run M&R program is the only one available.

ControlWave XFC is shipped with the program (.MWT file) loaded in Flash and the Flash Configuration Program (FCP) also loaded.

For users who expect to use their own program, ControlWave XFC can also be ordered without an application program.
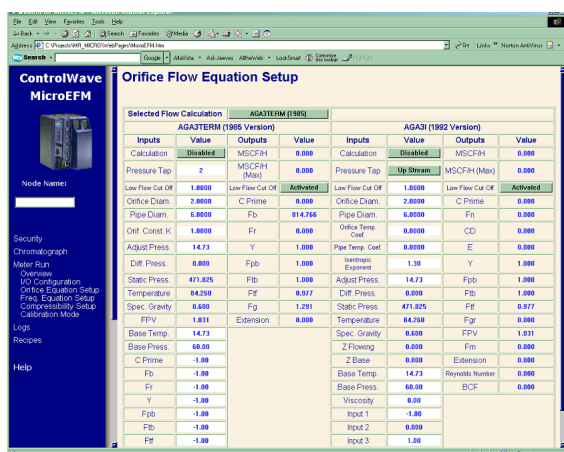
The user's interface to the Standard Application Program is via a series of straight-forward web style menu pages.

Overview of the Standard Application Program

- Uses pre-configured web style menu pages for user readings, configuration and maintenance—PC menu pages can be modified and new pages configured to work with a modified application load.

- Uses the LocalView Calibration Utility for calibration of all transducers, including the integral sensor and external, Bristol transmitters (e.g. 3808 MVT).

- The PC menu pages, calibration utility and program load are all included on the BSI Config CD.

- Standard configuration is a one-run or two-run station.

- Each run can be orifice, turbine/PD or ultrasonic.

- Flow calculations include the following:
  - AGA3-1992 with selectable AGA8 Gross or AGA8 Detail
  - AGA3-1985/NX-19
  - AGA7/NX-19
  - AGA7 with selectable AGA8 Gross or AGA8 Detail
  - Auto Adjust AGA7/NX-19
  - Auto Adjust AGA7 with selectable AGA8 Gross or AGA8 Detail

- Allows the user to select the integral sensor assembly or an external transmitter. External transmitters can be interfaced via RS 485 or analog inputs.

- Includes an auto-selector, PID flow/pressure control algorithm

- Includes run switching

- Resides on a BSAP SCADA network

- Supports a sampler and an odorizer

- Provides audit trail and archives

- Includes a nominations function

- Allows the user to select engineering units from a broad variety, including English and metric

- Provides energy throughput as well as composition information (note that a chromatograph is not supported by the standard application program).

- Provides control for external modems and radios for power saving and other modes of operation.

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Communication Port Configuration for the Standard Application Program

COM1 – Local RS 232 port for configuration via a PC. Flash configuration is BSAP Slave, 115.2K baud rate.

COM2 – RS 232 Network port with Flash configuration of BSAP Slave, 9600 baud. The standard application program is compatible with an external communication device via RS 232.

COM3 – RS 485 port with Flash configuration of BSAP Master at 9600 baud. The standard application program assumes that a 3808 MVT smart multivariable transmitter is to be interfaced to this port.

Hazardous Area Certification

Class I, Division 1 certification via the explosion proof packaging and Class I, Division 2 certification via non-incendive electronics are specified in selection "G."

Manifold Adapters

Optional manifold adapters, which come in a set of two, one for each flange for the DP/P sensor assembly, are available in stainless steel and specified in selection "H."

Mounting Bracket

An optional mounting bracket, which affixes to the neck of the housing and allows installation on a wall or 2" pipe, can be specified in selection "J."

I/O Configuration

In selection "K," the user can choose a configuration without I/O, one with 2 DI, 2 HSC and 4 DO, and one with 2 DI, 4 DO, 2 HSC plus 3 AI and 1 AO.

It is recommended that users select an I/O configu-

ration if use of any I/O is anticipated in the future because addition of the points requires a change-out of the I/O card—due to hazardous area certification requirements, that can be done only at the factory.

ControlWave XFC I/O Specifications

Discrete Inputs

- Number of points: 2
- Input configuration: Internally sourced dry contact
- Input filtering: 15 milliseconds
- Input current: 60 uA nominal.
- "0" state voltage: Below 1.5V
- "1" state voltage: Above 1.5V
- Maximum Scan Rate: once per second
- Electrical isolation: None
- Surge Suppression: 30V transorb between signal and ground meets ANSI/IEEE C37.90-1978
- Terminations: Pluggable Terminal block accommodates up to 14 gauge wire size

Discrete Outputs

- Number of points: 4
- Configuration: Open Drain MOSFET, externally sourced
- Maximum load current: 400 mA at 30 Vdc
- Maximum Update Rate: once per second
- Electrical isolation: None
- Surge Suppression: 30V transorb between signal and ground meets ANSI/IEEE C37.90-1978
- Terminations: Pluggable Terminal block accommodates up to 14 gauge wire size

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High Speed Counter Inputs

• Number of points: 2

• Input Range: Internally source dry contact input

• Frequency range: 0 – 10,000 Hz

• Input filtering: 20 microseconds

• One shot pulse conditioned signal to MSP counter

• Signal Conditioning: Debounce circuit for contact closures and bandwidth limiting for counter input

• Input current: 200uA

• "0" state voltage: Above 1.5V

• "1" state voltage: Below 1.5V

• Electrical isolation: None

• Surge Suppression: 30V transorb between signal and ground meets ANSI/IEEE C37.90-1978

• Terminations: Pluggable Terminal block accommodates up to 14 gauge wire size

Analog Inputs

• Point Count: 3 Inputs, Single ended

• Range: 1-5 Vdc, externally powered

• Input Impedance: 1 M ohm

• Filter: single pole

• Accuracy +/- .1% of full scale at 25ºC; +/- .2% of full scale from -20 to 70ºC; +/- .3% of full scale from -40 to 80ºC

• Maximum Scan Rate: once per second

• Surge Suppression: 9V transorb between signal and ground meets ANSI/IEEE C37.90-1978

• Terminations: Pluggable Terminal block accommodates up to 16 gauge wire size

Analog Output

• Point Count: One analog output

• Range: 4-20mA Sink

• Maximum drive for 4-20 mA output: 450 Ohms

• Resolution: 16-bits

• Accuracy: +/- 0.1% of full scale at 25ºC; +/- 0.2% of full scale from -20 to 70ºC, +/- 0.3% of full scale; -40 to 80ºC

• Maximum Update Rate: once per second

• Surge Suppression: 9V transorb between signal and ground meets ANSI/IEEE C37.90-1978

• Terminations: Pluggable Terminal block accommodates up to 16 gauge wire size

RTD Interface Information

A three-wire platinum RTD per DIN 43760 is supported. The temperature, T, in degrees Celsius is calculated using the Resistance vs. Temperature Tables according to the DIN EN 60751 standard for Class A & B RTDs. The DIN EN 60751 equation is:

$R(t) = R_0 * (1 + At + Bt^2)$
Where:

$A = 3.9083 * 10^{-3}$ $^\circ C^{-1}$
$B = -5.775 * 10^{-7}$ $^\circ C^{-2}$
$R_0 = 100 ohms$

In addition, the user may enter the R_0, A, and B coefficients of a custom calibrated RTD, another platinum standard or a different material (Nickel, Balco or Copper).

During the RTD calibration, the user will be able to set the coefficients, restore the factory default for these coefficients, and calibrate the internal Reference resistor.

RTD Input Specifications

These specifications are for the interface only, not including the RTD probe or wiring (please note that

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RTD probe interchangeability can add ±0.7°C of uncertainty to the measurement).

- RTD Conversion Accuracy: ± 0.1°C, or ± 0.1% of reading, whichever is greater

- Ambient temperature effect on RTD measurement: ±0.01°C / ºC max

- Long Term Stability at Constant Conditions: ±0.25ºC / month max

Accessories

Bendable RTD

The user can choose a bendable RTD that is attached to the ControlWave XFC via an armored cable of 6-foot, 15-foot or 25-foot length. The individual wires attach to a terminal block on the termination plate.

The RTD assembly includes a fitting, which is installed in the right-hand (when looking at the termination plate end of the instrument) conduit port.

Normally, this RTD would be used to provide the process temperature input but the standard application program also allows the user to select an external temperature transmitter, instead.

The bendable RTD is a "one size fits all" solution that is perfect for most applications and excellent for depot-level inventory situations in which the ultimate installation (and, therefore, thermowell depth) is not necessarily known.

The 12" probe can quickly be inserted in a thermowell, whereupon the user can tighten the included fitting to lock it in place and bend the excess length out of the way.

Note that a thermowell is required for this bendable RTD!

Note also that the bendable RTD assembly is approved only for use in Class I, Division 2 hazardous areas and is not explosion proof.

Bendable RTD Assembly Part Numbers

- 6 Foot Cable - 621564-01-0-KIT

- 15 Foot Cable - 621564-02-8-KIT

- 25 Foot Cable - 621564-03-6-KIT

PC CABLES

PC cables for ControlWave XFC will be released in the near future

STANDARD APPLICATION PROGRAM AND PC MENU PAGES

ControlWave XFC normally comes pre-loaded with the Standard Application Program (.pro file) in Flash. However, the PC menu pages are not loaded in Flash but are available either via the Emerson Process Management web site or on a CD. The CD is the "BSI Config" CD, which also contains the LocalView Calibration Tool as well as a copy of the Standard Application Program.
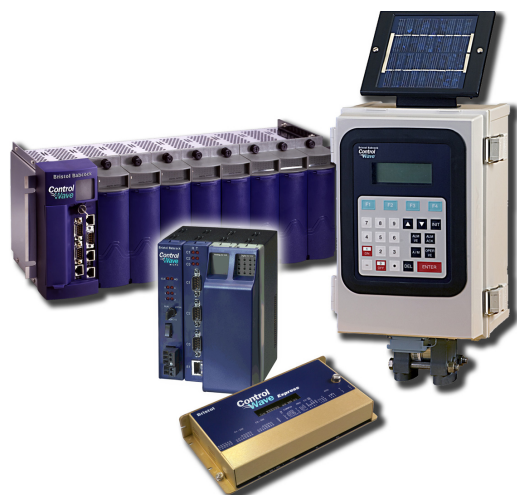
BSI Config CD – p/n 395575-02-8

For users wishing to modify the Standard Application Program, it is available as source code. Please contact Emerson's Remote Automation Solutions Application Services department for information.

ControlWave XFC is compatible with ControlWave PAC/RTU products, above, as well as the other members of the ControlWave flow computer family.

Product Family Compatibility

ControlWave XFC is compatible with Emerson's Bristol ControlWave family. It is fully software-compatible with ControlWave GFC, ControlWave EFM, ControlWave Micro and the ControlWave Process Automation Controller (PAC). The ControlWave PAC provides the highest I/O capacity and supports up to three Ethernet ports as well as redundancy.

This family compatibility is a major benefit to users whose operations include a number of larger installations in addition to those that require flow computers. ControlWave family products are capable of all measurement & control functions at sites such as major, custody-transfer metering stations, compressor stations, off-shore platforms, processing plants and storage facilities.

Users will not only appreciate the similarity in much of the hardware but will also find the documentation, networking and software compatibilities to be important to their asset management.

Open Standards For Programming, Network Configuration and Communication

Only ControlWave brings the perfect combination of industry standards to minimize learning, engineering and implementation costs.

By adhering to such industry standards as Ethernet, TCP/IP, Microsoft Windows®, COM/DCOM, FTP, OLE and ActiveX, ControlWave is able to achieve the highest degree of openness in control system architecture and bring the optimal process efficiency and productivity needed to ensure a successful system implementation.

ControlWave Designer with ACCOL III

To minimize your engineering and development time, we have adopted the international standard for controller programming, IEC 61131-3. ControlWave Designer is a fully IEC 61131-3-compliant programming environment for the ControlWave family of products. ControlWave Designer includes all five IEC 61131-3 process languages for batch, continuous and discrete control: Function Block Diagram, Structured Text Sequential Function Chart, Ladder Logic Diagram and Instruction List.

ControlWave Designer includes an extensive library of more than 200 basic IEC 61131-3 functions and function blocks common to many IEC 61131-3 based products. These include:

- Flip-flops, Counters & Timers
- Ladder diagram functions – coils and contacts, etc.
- Numerical, Arithmetic & Boolean functions – Sine, Cosine, Add, Sub, Square Root, And, Or, etc.
- Selection & Comparison – Min, Max, Greater than, Equal, Less than, etc.
- Type conversions – Integer to Real, Boolean to Word, etc.

ACCOL III

In addition to the basic functions and function blocks, ControlWave Designer brings the benefit of many years experience in measurement and SCADA to the Bristol ACCOL III function block library. ACCOL III includes over sixty function blocks that are valuable for use in oil & gas and process measurement & control applications. Further, AC-COL III is designed to take full advantage of the significant features offered by ControlWave.

Briefly, this library includes function blocks for:

• AGA gas flow and API liquids calculations

• Audit, Archive, File Handling

• Average, Compare, Totalize

• Scheduling & Sequencing

• PID & Lead/Lag

In addition, ControlWave ensures data integrity, in the event of a communication interruption, by storing critical time-stamped alarm and historical data in the controller memory. This data is then securely retrieved when communication is restored.

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ControlWave XFC Termination Panel - No I/O (note that all three serial ports and the RTD input are always available, regardless of the I/O selection.)
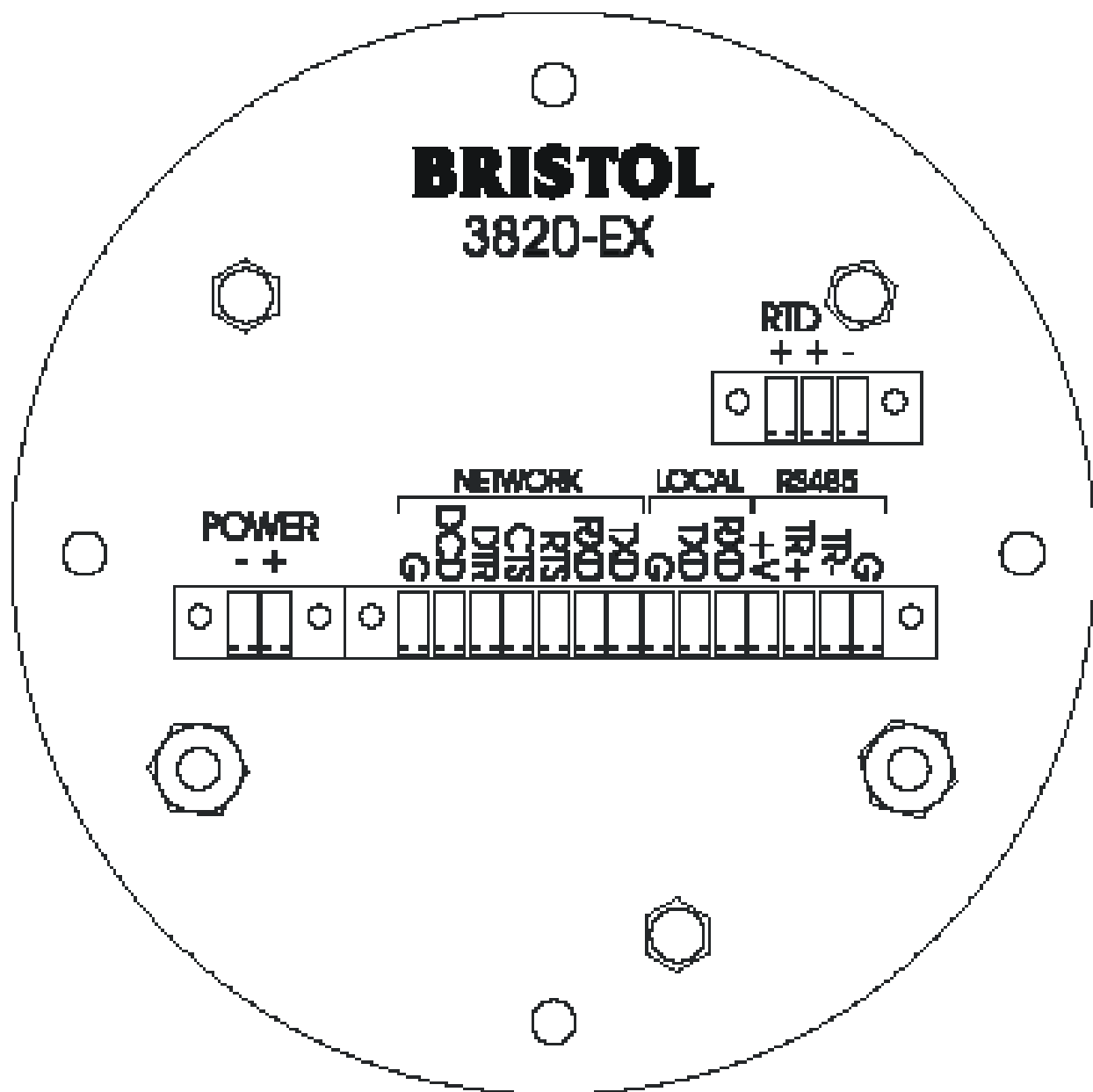
ControlWave XFC Termination Panel - With Digital I/O
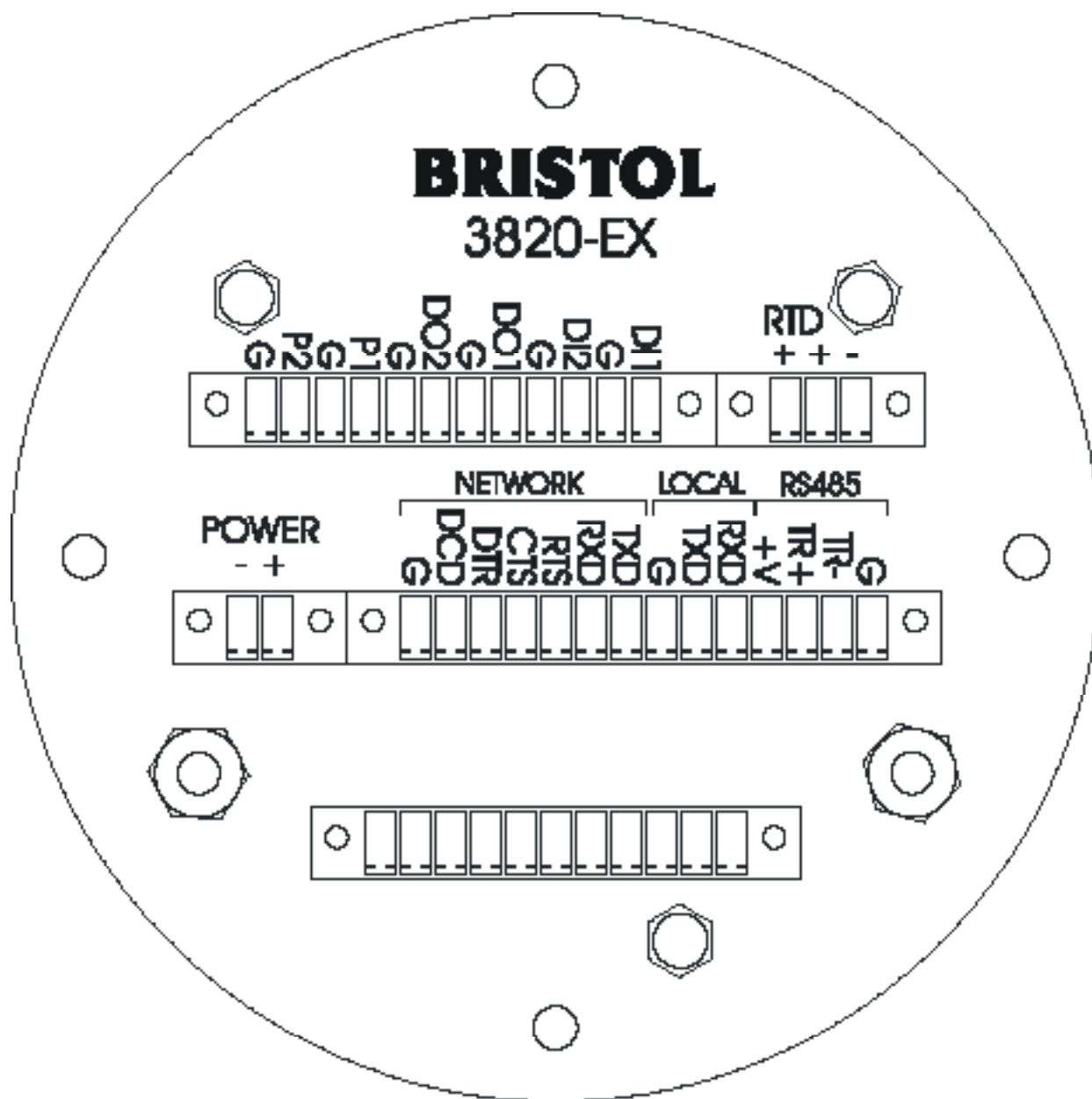
ControlWave XFC Termination Panel - With Full I/O Complement

Bristol® ControlWave® XFC

ControlWave XFC Termination Wiring Showing the full I/O configuration

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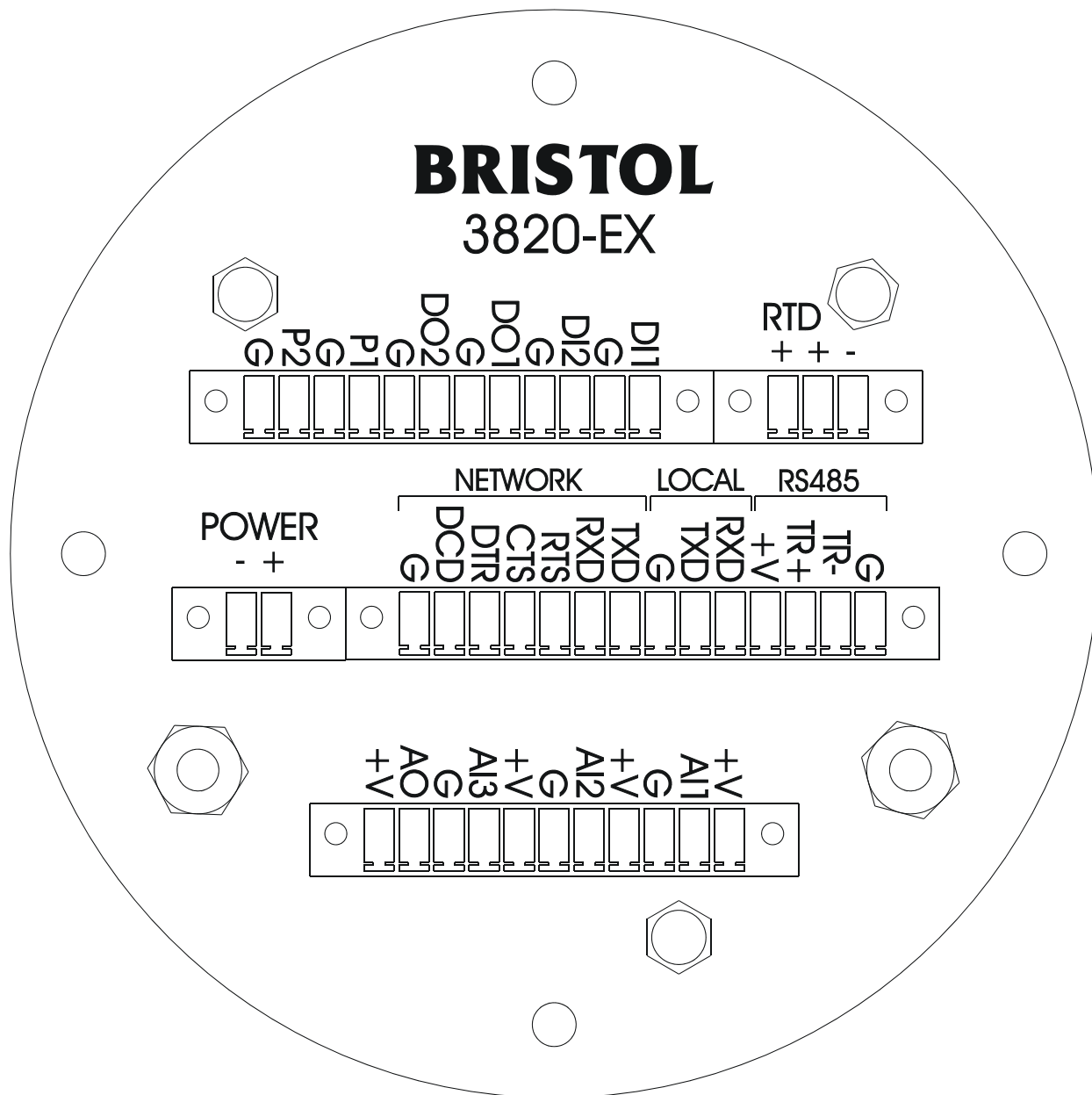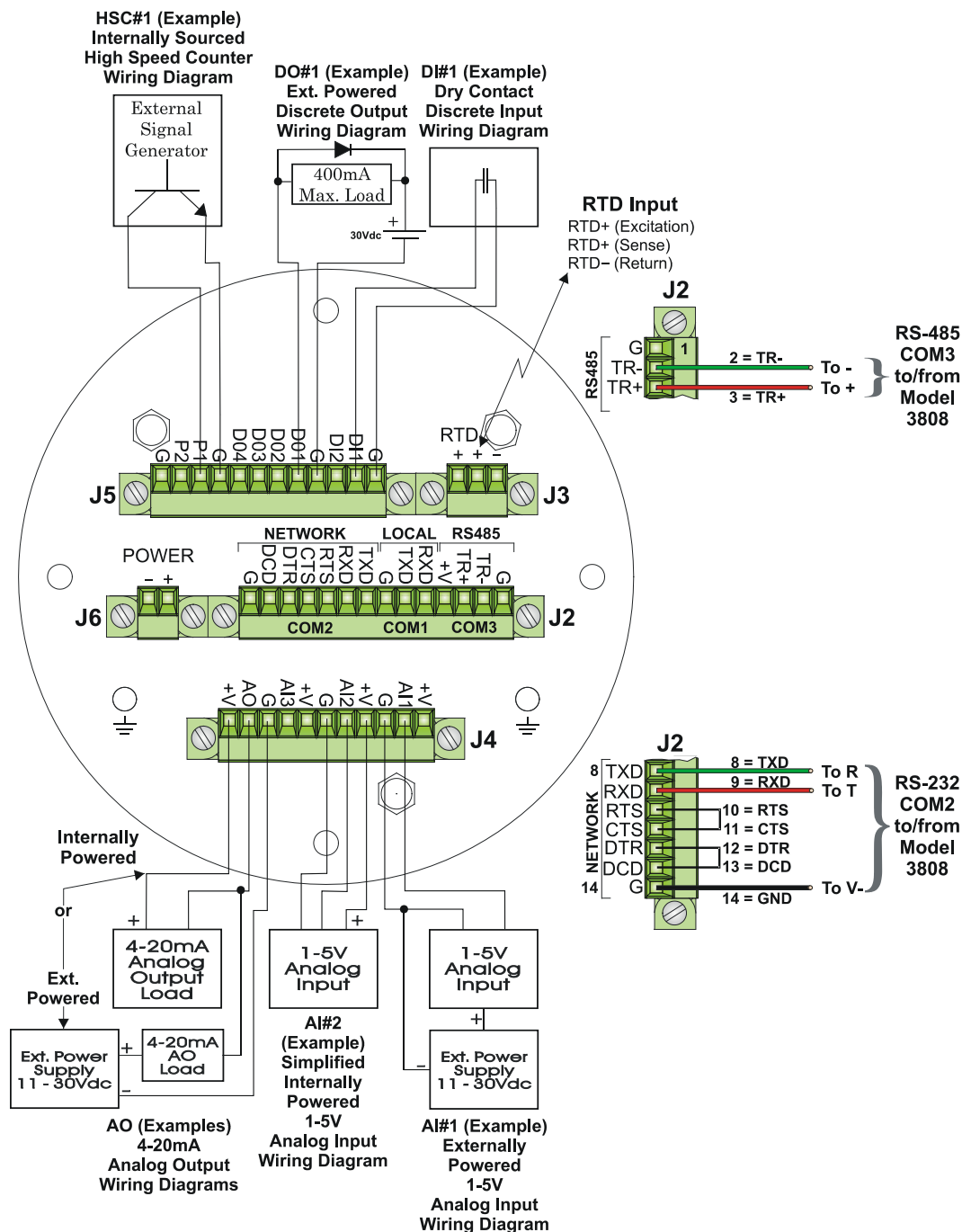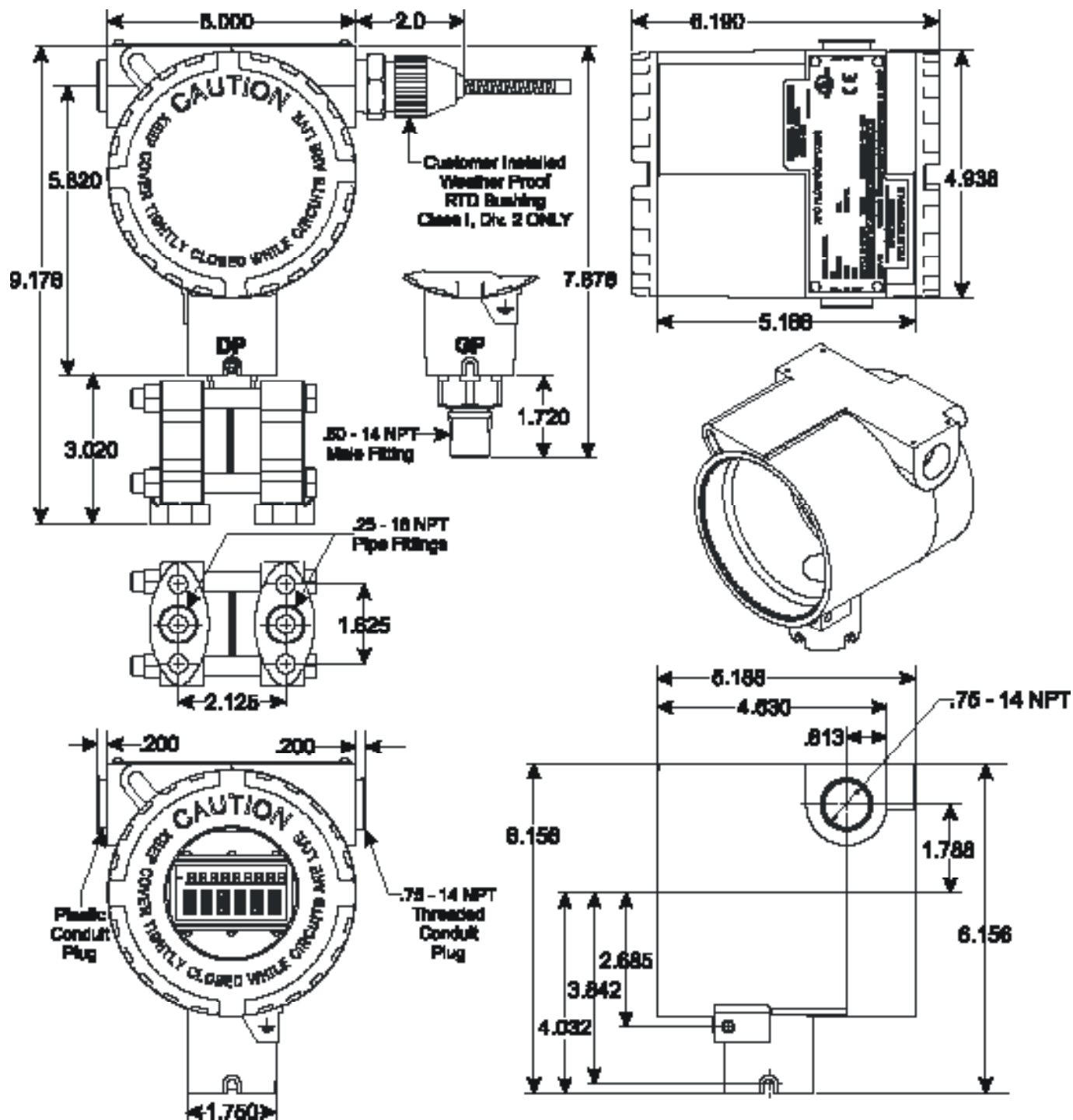**Process Management**

Dimensions

Model Number Specification

A B C - D - EF - G - H - J - K - L

Model Number: 3820-EX-10A- _ _ _ - _ - _ _ - _ - _ - _ - _

	DESCRIPTION	CODE
A B C	**Integral Transducer Assembly - Either Gauge Pressure or DP/P**	**A B C**
	Gauge Pressure Transducers URL (psig - unless indicated otherwise)	
	300 inH2O	0 1 4
	25	0 2 0
	100	0 2 2
	300	0 2 3
	1000	0 2 5
	2000	0 2 8
	DP/P Transducers - DP URL (inH2O) / Static Pressure URL (psig)	
10	150 / 1000	1 2 1
	150 / 2000	1 2 2
	150 / 500	1 2 3
	100 / 2000	1 3 2
	300 / 1000	1 4 1
	300 / 2000	1 4 2
	300 / 4000	1 4 4
	25 PSID / 2000	2 0 2
	25 PSID / 4000	2 0 4
D	**Wetted Parts Material**	**D**
20	316 Stainless Steel	1
	Hastelloy C	2
E F	**Application Program**	**E F**
	None	0 0
30	Standard, 1 - 2 Run M&R Program	0 1
	Standard, 1 - 2 Run M&R Program, Industry Canada Approved	02

G	Certification		G
	None		0
40	UL Class I, Division 1 Explosion Proof and Class I, Division 2 Non-incendive		1
H	**Manifold Adapters**		**H**
	None		0
50	316 Stainless Steel (note: manifold adapters are not available in Hastelloy)		1
J	**Mounting Bracket**		**J**
	None		0
60	With Neck Mounting Bracket		1
K	**I/O Configuration**		**K**
	No I/O	Note: All configurations, here,	0
70	Digital Only 2 DI, 4 DO, 2 HSC	include three communication	1
	2 DI, 4 DO, 2 HSC + 3 AI and 1 AO	ports and RTD input.	2
L	**RTD / Cable Assembly**		**L**
	None	Please refer to the notes,	0
	With RTD and 6-foot Cable	below, concerning the RTD /	1
80	With RTD and 15-foot Cable	Cable Assemblies.	2
	With RTD and 25-foot Cable		3

NOTES: RTD/CABLE ASSEMBLIES

If selected in "L" above, the RTD/Cable assembly will be shipped in the same box as the ControlWave XFC. Due to UL restrictions, they cannot be shipped "pre-connected."

IMPORTANT: These particular RTD assemblies are not explosion-proof but are approved for Class I, Division 2 hazardous areas. For explosion-proof RTD components, please refer to the "Electronic Transmitters" section of the price book.

To specify a ControlWave XFC that is approved by Industry Canada for custody transfer installations, please use the following model number and attachment number:
3820-EX-10A-142-102-10020
3820-A-1

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Spare Parts for ControlWave XFC

DESCRIPTION		PART NUMBER
Electronics Assemblies or Boards		
CPU Board Assembly		**400068-010**
I/O Board Assembly, No I/O (corresponds to selection K=0)		**400075-03-2**
I/O Board Assembly, 2DI, 4DO, 2HSC (corresponds to K=1)		**400075-02-4**
I/O Board Assembly, 2DI, 4DO, 2HSC, 3 AI, 1 AO (corresponds to K=2)		**400075-01-6**
DP/P Transducer Assemblies - 316 SS, No Vent		
150" / 1000 psi	**The transducer assembly includes**	**396531-01-6**
150" / 2000 psi	**the replacement component but**	**396531-02-4**
150" / 500 psi	**does not include the internal**	**396531-03-2**
100" / 2000 psi	**cable.**	**396531-04-0**
300" / 1000 psi		**396531-05-9**
300" / 2000 psi		**396531-06-7**
300" / 4000 psi		**396531-08-5**
25 psid / 2000 psi		**396531-07-5**
25 psid / 4000 psi		**396531-09-1**
DP/P Transducer Assemblies - Hastelloy, No Vent		
150" / 1000 psi		**396533-01-9**
150" / 2000 psi		**396533-02-7**
150" / 500 psi		**396533-03-5**
100" / 2000 psi		**396533-04-3**
300" / 1000 psi		**396533-05-1**
300" / 2000 psi		**396533-06-0**
300" / 4000 psi		**396533-08-6**
25 psid / 2000 psi		**396533-07-8**
25 psid / 4000 psi		**396533-09-4**
Gauge Pressure Transducer Assemblies - See Next Page		

Spare Parts for ControlWave XFC - Continued

DESCRIPTION	PART NUMBER
Gauge Pressure Transducer Assemblies - 316 SS	
300"	396536-02-6
25 psi	396536-04-2
100 psi	396536-06-9
300 psi	396536-07-7
1000 psi	396536-09-3
2000 psi	396536-12-3
Gauge Pressure Transducer Assemblies - Hastelloy	
300"	396538-02-9
25 psi	396538-04-5
100 psi	396538-06-1
300 psi	396538-07-0
1000 psi	396538-09-6
2000 psi	396538-12-6
Internal MVT Cable	396667-01-5